



## Department-Approved Course Requirements: 1-Hour Welding and Cutting

**Course Required for:**

**Worker Training**

**Purpose:**

This course is a specialized elective course that can help fulfill the requirement for an individual applying for a Site Safety Training Card. **THIS IS AN AWARENESS-LEVEL TRAINING ONLY and does not provide any other qualification or authorization outside of the Site Safety Training Card.**

**Duration:**

1 Hour of instructional time, excluding breaks

**Class Size:**

**1-40 Trainees**

**NYC Requirement:**

In order to continue to operate in the City of New York, the designated construction worker is required to complete a minimum number of hours of approved site safety training and to carry site safety identification cards as proof of completion of the training (As per New York City Local Law 196 of 2017 also known as 'LL196' or 'Local Law'). This course provides one hour towards the satisfaction of that requirement.

**Facility Requirements:**

The Training Facility used by the Course Provider must:

- Have sufficient room to accommodate all expected attendees and the equipment needed to perform hands-on exercises where required as part of the course.
- Make provisions for the presentation of training material in all media types (computer, projectors, video/DVD players, etc.); and
- Comply with all applicable laws, rules & regulations relating to occupancy, zoning, egress, fire detection, fire suppression, light, ventilation, cleanliness, sanitary facilities, emergency notification & evacuation procedures.

Training may be held at construction sites, provided the above requirements are met.

**Instructor Requirement:**

To deliver this course the instructor(s) must demonstrate that he or she is credentialed or trained in instructional methods and learning processes. The instructor(s) must also successfully demonstrate his or her ability to solve or resolve problems relating to the subject matter by possession of a recognized degree, certificate, licensure or professional standing, or by extensive knowledge, training, and experience, in the subject matter being taught. To the extent that the course instructor(s) holds, or has held, a trade license issued by the Department, it must be in good standing and not be surrendered to, suspended by or revoked by the Department.

The instructor(s) must also be authorized by the Occupational Safety and Health Administration ('OSHA') as a trainer(s) for its Construction and Outreach Program.

**Curriculum Requirement:**

All **topics** listed under **Course Content Outline** must be covered using the listed **Instructional Delivery Method**. The time dedicated to each outline topic should be appropriate for the course content and can vary depending on the trade or job performed by the trainee. The **Instructional Delivery Materials** used in this course must contain all current applicable NYC Construction Code references, current rules, policies & bulletins.

**Course Curriculum Proposal Package Review:**

A comprehensive review will be performed by the **Department of Buildings** to determine compliance with these Course Curriculum Requirements.

### **Instruction Delivery Method**

**Media:** Lecture/Discussion, Slide Presentation

**Handouts:** Slides, references and handbook

**Guided Learning:** Trainees will create their own checklist for welding and cutting hot work permits.

### **Course Content Outline**

1. Introduction
  - a. Instructor introduces topic and describes their qualifications and relevant experience for training this module.
  - b. Establish that all trainees can hear and fully understand you i.e. 'raise your hand if you fully understand me' or 'clap your hands if you fully understand me'
  - c. State basic classroom rules, bearings and decorum
    - i. Inform trainees of duration or training and breaks (if any)
    - ii. Remind trainees about limiting distractions (phone use, texting, sidebar conversations)
    - iii. Emergency procedures (location and means of egress, exits or other contingencies)
    - iv. Location of restrooms
  - d. Training Objectives and Expectations:
    - i. Trainees will become generally familiar with and be able to describe and recognize welding and burning work activities and various related safety components.
    - ii. Trainees will be able to recognize safety and health hazards associated with welding and burning activities.
    - iii. Trainees will be able to avoid safety and health hazards associated with welding and burning activities.
    - iv. Trainees will be able to prevent and control safety and health hazards associated with welding and burning activities.
    - v. Trainees should become aware of administrative safety requirements and processes associated with welding and burning activities.
2. Describe and illustrate operational components of gas welding and cutting:
  - a. Torches
  - b. Hoses
  - c. Compressed gas tanks
  - d. Gauges
  - e. Fire Blankets
  - f. Screens
  - g. Electrode, conducting wires, ground
  - h. Compressed
3. Describe and illustrate operational safety and health components for arc welding and cutting.
  - a. Inspection process
  - b. Proper use of fire extinguish
  - c. Placement of hoses
  - d. Proper Code-compliant handling of compressed gas tanks and equipment including gauges, flashback arrestors, etc.
  - e. Positioning requirements, i.e. distances from hot work, from tanks, fire watches, combustible materials

- f. Prohibitions of arc welding (pipelines, water)
  - g. Storage
  - h. Shielding of operations (non-ionizing radiation)
  - i. Smoke accumulation
  - j. Respiratory protection
  - k. Proper use of fire guards/watch
  - l. Transportation of compressed gases
  - m. Storage of compressed gases
4. Describe and illustrate operational components of arc welding and cutting:
- a. Electrodes
  - b. Conducting cables
  - c. Grounds
  - d. Welding machines
  - e. Fire Blankets
  - f. Screens
5. Describe and illustrate operational safety and health components for arc welding and cutting.
- a. Inspection process
  - b. Proper use of fire extinguish
  - c. Welding cables and connectors
  - d. Handling, care and repair
  - e. Grounding returns
  - f. Prohibitions of arc welding (pipelines, water)
  - g. Storage
  - h. Shielding of operations (non-ionizing radiation)
  - i. Smoke accumulation
  - j. Respiratory protection
  - k. Proper use of fire guards/watch
6. Describe various personnel involved with welding and cutting
- a. Licensed welder
  - b. Fire watch and guards
  - c. Impairment Coordinators
  - d. FDNY Certificate of Fitness holders
7. Basic Fire Science and Fire Prevention and Protection
8. Describe and illustrate (with a sample Hot-Work Permit) the Hot-Work Permit Process
- a. Pre-start inspections
  - b. Post hot work inspection and watch
9. Fire Watch Requirement
- a. Regulatory watch requirements
    - i. Duration of Time
    - ii. Distance from hot work
    - iii. Personal Protection Equipment
10. Effects on health from welding and cutting activities

- a. Fumes and heavy metals
- b. Lead accumulation
- c. Safe Data Sheets and Hazardous Communication
- d. Retinal degeneration disorders

11. Resources:

- a. Applicable OSHA Standards Subpart J Title 29 CFR 1926.350
- b. Worker's Rights (See OSHA: <https://www.osha.gov/Publications/OSHA3146.pdf>)
- c. OSHA Regional Map: <https://www.osha.gov/html/RAmap.html>
- d. NYC Fire Code Chapters 9 and 14
- e. NFPA 241

12. Debriefing (Informal evaluation)

- a. Guided by instructor, trainees, in a class discussion talk about the course's content and means of delivery and provide verbal feedback to the instructor.
- b. Instructor takes notes (either committing them to writing during discussion or ascribing them later into noted-comments).
- c. Instructor applies lessons learned from debriefing to future trainings.

13. Written (Multiple Choice with illustrations) Assessment